

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (previously presented): A computer-implemented method for providing a persistent connection between a client and a server, the method comprising:

binding a primary virtual server to a set of URLs, each URL having an associated real server;

receiving a request from a client for connection to the primary virtual server;

selecting one of the real servers for connection with the client;

sending a redirect message to the client specifying the selected real server; and

receiving a new connection request from the client for connection with the selected real server;

wherein the client is connected to the selected real server for the duration of a transaction.

Claim 2 (original): The method of claim 1 further comprising binding each of the real servers to a virtual server, each pair of real and virtual servers having the same IP address.

Claim 3 (original): The method of claim 2 wherein the IP address is associated with the URL of the corresponding real server.

Claim 4 (original): The method of claim 2 wherein each pair of real and virtual servers share weight assignments.

Claim 5 (original): The method of claim 2 wherein each pair of real and virtual servers share state information.

Claim 6 (original): The method of claim 1 wherein the client request is an HTTP request.

Claim 7 (original): The method of claim 6 wherein the redirect is an HTTP redirect.

Claim 8 (original): The method of claim 1 wherein selecting one of the real servers comprises load balancing the real servers.

Claim 9 (original): The method of claim 1 further comprising providing a backup link for each of the real servers to the primary virtual server.

Claim 10 (original): The method of claim 1 further comprising providing a backup link for each of the real servers to one of the other real servers.

Claim 11 (original): The method of claim 1 further comprising binding an additional real server to the primary virtual server and load sharing between the new real server and the original set of real servers.

Claim 12 (original): The method of claim 1 wherein receiving a request from a client comprises receiving a request at a local director.

Claim 13 (previously presented): A computer-implemented method for load balancing between servers and providing a persistent connection between a client and a server, comprising:

receiving a request from a client for connection to a primary virtual server to start a session, the primary virtual server being bound to a plurality of secondary virtual servers each associated with a real server and having the same address as the real server;
selecting one of the real servers for connection with the client;
sending a redirect message to the client specifying the selected real server;
receiving a new request from the client for connection to the selected real server;

forwarding to the selected real server transmission originating from the client;
forwarding to the client transmission originating from the selected real server;
and
continuing to forward transmission from the client to the selected server
throughout the session.

Claim 14 (previously presented): A computer program product for providing a persistent connection between a client and a server, the product comprising:

code that binds a primary virtual server to a set of URLs, each URL having an associated real server;

code that receives a request from a client for connection to the primary virtual server;

code that selects one of the real servers for connection with the client;

code that sends a redirect message to the client specifying the selected real server;

code that receives a new request from the client for connection to the selected real server, wherein the client is connected to the selected real server for the duration of a transaction; and

a computer-readable storage medium for storing the codes.

Claim 15 (original): The computer program product of claim 14 wherein the computer readable medium is selected from the group consisting of CD-ROM, floppy disk, tape, flash memory, system memory, hard drive, and data signal embodied in a carrier wave.

Claim 16 (original): The computer program product of claim 14 further comprising code that binds each of the real servers to a virtual server, each pair of real and virtual servers having the same IP address.

Claim 17 (original): The computer program product of claim 14 further comprising code that provides a backup server for each of the real servers.

Claim 18 (previously presented): A computer program product for binding a plurality of real servers to a primary virtual server for establishing persistent connections between a client and the real servers, the product comprising:

- code that creates an identifier for each of the real servers;
- code that binds the real servers to the primary virtual server;
- code that creates a plurality of secondary virtual servers, each of the secondary virtual servers associated with one of the real servers and having the same address as the associated real server;
- code that binds each of the secondary virtual servers with its associated real server;
- code that maintains a persistent connection between a client and one of the real servers throughout a transaction; and
- a computer-readable storage medium for storing the codes.

Claim 19 (original): The computer program product of claim 18 wherein the real server identifiers are URLs.

Claim 20 (original): The computer program product of claim 19 wherein the primary virtual server is bound to the URLs of the real servers.

Claim 21 (previously presented): A computer system for providing a persistent connection between a client and a server, the system comprising:

- a virtual server;
- a plurality of real servers each having an associated URL; and
- a processor for binding the virtual server to the URLs of the real servers, selecting one of the real servers for connection to a client, redirecting a connection request for the virtual server from the client to the selected real server, the processor configured for creating a persistent connection between the selected real server and the client throughout a session.

Claim 22 (previously presented): A system for directing flow between a client and two or more servers, the system comprising:

a primary virtual server bound to a plurality of URLs, each URL having an associated real server;

means for receiving a client request for content;

means for selecting a real server for providing content to the client;

means for providing the URL of the selected real server to the client; and

means for receiving a new connection request from the client for connection to the selected real server;

wherein the client is connected to the selected real server for the duration of a transaction.

Claim 23 (previously presented): A network apparatus for directing flow between a client and two or more servers, the network apparatus comprising:

memory; and

a processor configured to:

bind a primary virtual server to a set of URLs, each URL having an associated real server;

receive a request from a client for connection to the primary virtual server;

select one of the real servers for connection with the client;

receive a new connection request from the client for connection with the selected real server;

send a redirect message to the client specifying the selected real server; and

receive a new connection request from the client for connection with the selected real server;

wherein the client is connected to the selected real server for the duration of a transaction.

Claim 24 (previously presented): The method of claim 1 further comprising forwarding messages from the client to a backup server associated with the selected real server for the duration of the transaction.

Claim 25 (previously presented): The method of claim 7 wherein the HTTP redirect comprises a URL of the selected real server.

Claim 26 (previously presented): The method of claim 2 wherein a directed IP identifier provides one-to-one bindings between the virtual server and real server pairs.

Claim 27 (previously presented): The method of claim 26 further comprising linking said directed IP identifier to a URL.

Claim 28 (previously presented): The method of claim 26 further comprising a URL associated with the virtual server inheriting weights and states assigned to the directed IP identifier.

Claim 29 (previously presented): The method of claim 1 further comprising creating secondary virtual servers, each of said secondary virtual servers bound to one of the real servers.

Claim 30 (previously presented): The method of claim 1 further comprising:
receiving a request from the client during the transaction for connection to an SSL page; and
creating a link between the selected real server and the SSL page.

Claim 31 (previously presented): The method of claim 8 wherein load balancing is only performed in selecting one of the real servers for connection with the client.

Claim 32 (previously presented): The method of claim 13 wherein receiving a request from the client comprises receiving an HTTP request and forwarding to the selected real server transmission comprises forwarding an HTTP request.

Claim 33 (previously presented): The method of claim 32 further comprising sending an HTTP redirect message to the client, the HTTP redirect message identifying the selected real server.

Claim 34 (previously presented): The system of claim 21 further comprising a plurality of secondary virtual servers, each of said plurality of secondary virtual servers associated with one of said plurality of real servers.

Claim 35 (previously presented): The system of claim 34 wherein each pair of secondary virtual servers and real servers have the same IP address.

Claim 36 (previously presented): The system of claim 34 further comprising a local director comprising said processor and secondary virtual servers and configured to balance loads between said plurality of real servers.

Claim 37 (previously presented): The computer program product of claim 18 further comprising code that load balances the real servers.

Claim 38 (previously presented): The computer program product of claim 37 wherein load balancing is performed only to connect a client with one of the real servers at the start of a transaction.